

## MODULE 6 - PARASITES

### Objectives

This module is for INFORMATION ONLY. No BETC test questions are from this module.

On completion of this section, participants will be able to:

- Discuss the parasites and corresponding life cycle stage in regards to food products.
- Discuss the potential for the presence and transmission of food borne parasites.
- Discuss the measures that may be taken to decrease the incidence, prevent contamination, or eliminate transmission of parasites through food products.

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### General Concepts

The following are the general concepts for this section.

- No reproduction or multiplication while in or on food products, reproduction requires a specific host or of group of host.
- Corollary to the above statement - transmission of parasites to a new host (the consumer) only occurs when a particular life cycle stage is present.
- Second corollary - enrichment techniques used in microbiology are often ineffective in analysis for parasites. Many parasites have a low infectious dose
- The longer incubation period for parasitic infections (often 7 - 10 days) makes traceback efforts for epidemiological studies difficult.
- Many control measures are available, but particular life cycle stages of some parasites may be very resistant to selected measures.

This section will discuss some of the more important parasitic associated foodborne illness. The discussion will cover some of the most important illnesses caused by protozoa and parasitic worms including:

- ***Giardia lamblia*** <http://vm.cfsan.fda.gov/~mow/chap22.html>
- ***Entamoeba histolytica*** <http://vm.cfsan.fda.gov/~mow/chap23.html>
- ***Cryptosporidium parvum*** <http://vm.cfsan.fda.gov/~mow/chap24.html>

- ***Cyclospora cayetanensis***  
<http://vm.cfsan.fda.gov/~mow/cyclosp.html>
- ***Anisakis sp. and related worms***  
<http://vm.cfsan.fda.gov/~mow/chap25.html>
- ***Diphyllobothrium spp.***  
<http://vm.cfsan.fda.gov/~mow/chap26.html>
- ***Nanophyetus spp.*** <http://vm.cfsan.fda.gov/~mow/chap27.html>
- ***Eustrongylides sp.*** <http://vm.cfsan.fda.gov/~mow/chap28.html>
- ***Acanthamoeba*** and other free-living amoebae  
<http://vm.cfsan.fda.gov/~mow/chap29.html>
- ***Ascaris lumbricoides* and *Trichuris trichiura***  
<http://vm.cfsan.fda.gov/~mow/chap30.html>